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『EGzG ROCKY FLATS

EG&G ROCKY FLATS INC ROCKY FLATS PLANT P O BOX 464 GOLDEN COLORADO 80402 0464 (303) 966 7000

November 30 1994

94 RF 11801

Frazer Lockhart
Environmental Restoration Division
DOE RFFO

Attn Kurt Muenchow

OPERABLE UNIT (OU) 5 WOMAN CREEK PRIORITY DRAINAGE FEASIBILITY STUDY MEETING MINU CAB 072 94

Action

Forward the Feasibility Study meeting minutes to Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment (CDPHE)

This letter transmits the meeting minutes from the November 17 1994 Operable Unit 5 Feasibility Study meeting copies of the materials presented at the meeting and copies of the Project Manager's log book with the required signatures from DOE EPA and CDPHE

The next meeting will be on January 26 1995 at 8 30 a m to discuss the detailed screening of alternatives. The location will be announced at a later date

Please contact Carol Bicher at extension 9100 with any additional questions

Carol A Bicher

Program Manager Operable Units No 5 7 Closures Environmental Restoration Program Division

CAB cb

Original and 1 cc K Muenchow

Attachments As Stated Attachment 2 94 RF 11801 Page 1 of 4

MEETING MINUTES OPERABLE UNIT 5 CORRECTIVE MEASURES STUDY/FEASIBILITY STUDY (CMS/FS)

- 1 The meeting was held on November 17 1994 to present the upcoming strategy for the CMS/FS for Operable Unit 5 (OU 5) Copies of the presentation materials are attached
- The Remedial Investigation (RI) / FS was updated with respect to Implementation of Technical Memorandum #15 Addendum to the Field Sampling Plan. The drilling for the RI should be completed by Thanksgiving with groundwater monitoring continuing for 1 year. The geotechnical program is expected to be done by Christmas.
- 3 An overview of the OU 5 IHSSs was presented with the closure strategy of Presumptive Remedy for the Original landfill (IHSS 115/196) and the traditional CMS/FS for all the other IHSSs
- 4 The strategy for the Original Landfill was presented

The Presumptive Remedy components are containment and control management. The six components specified in the landfill presumptive remedy are cap/cover groundwater diversion/collection surface water diversion institutional/access controls leachate collection and landfill gas venting. The leachate collection and the landfill gas venting are not applicable to this case. In the Presumptive Remedy Report, a limited number of alternatives will be developed and screened with respect to effectiveness. Implementability, and relative cost.

The Geotechnical Boring Program included an evaluation of data sufficiency which identified geotechnical data needs necessary to conduct a slope stability analysis select a preferred presumptive remedy alternative and to prepare conceptual grading plans. The geotechnical boring program includes 19 borings with approximately 200 geotechnical analyses (e.g. shear testing plasticity etc.) and is scheduled to begin on November 28, 1994.

The data collected during this field effort will be used to conduct the slope stability analysis and prepare conceptual grade plans. It is currently estimated that the volume of fill material (structural fill plus the barrier layer) required at the landfill is approximately 300 000 cubic yards. A preliminary grade plan has been completed and will be modified as necessary to adjust for slope conditions

- J Schieffelin CDPHE asked what the estimated volume of fill material is currently present at the landfill site? There is an estimated 2 million cubic feet of non native material
- J Schieffelin CDPHE asked if capping the landfill was feasible? Yes the geotechnical field work and the subsequent slope stability analysis is being conducted to obtain data to determine how the landfill should be loaded with fill and cover material to ensure a stable landfill cap/cover. There are several cap/cover scenarios and the geotechnical program will guide the alternative evaluation and selection process. This will be summarized in the Presumptive Remedy Report.
- 5 The upcoming deliverables and the tentative schedule were presented

A Detailed Screening of Alternatives (DSA) level analysis of the landfill presumptive remedy will be available in January 1995. The geotechnical data are required to evaluate the effectiveness of each alternative. An EPA/CDPHE/DOE meeting was suggested to review the findings up to that point

The Draft Presumptive Remedy Report will be submitted to the agencies in March 1995 This report will incorporate the geotechnical data and provide a Detailed Analysis of Alternatives (DAA) level analysis

The Final Presumptive Remedy Report will be submitted in April 1995

- K Muenchow DOE suggested that in January/February the team may want to accelerate the closure of the landfill by breaking it out from the rest of the FS
- B Lavelle EPA clarified the point that a limited ARARs analysis is all that is needed to justify using the Presumptive Remedy Approach for the landfill Look at where Maximum Concentration Levels (MCLs) are exceeded in groundwater Document this in the Presumptive Remedy Report
- The Borrow Source Suitability Evaluation was discussed EG&G has been looking for potential sources of weathered claystone that could be used for fill and cover material at the OU 5 landfill site as well as the landfill at OU 7. The findings will be submitted soon in a borrow source report. One offsite and two onsite sources have been identified.
 - B Lavelle suggested coordinating with onsite Natural Resource personnel to avoid being blindsided by cost or other problems
 - J Schieffelin CDPHE asked if the whole landfill would be capped? Currently it is assumed that the entire landfill area will be covered. It may be possible to consolidate the material south of the road to the main part of the landfill as well as some of the areas to the east and west. Consolidating landfill wastes will lower the fill/cover material requirements and will keep the cover as far away as possible from the creek. The Presumptive Remedy Report will evaluate the areal extent of the landfill cover.
 - J Schieffelin CDPHE asked if a footprint would be presented in the Presumptive Remedy Report? No the footprint will be presented in the Slope Stability Report instead because it represents a portion of the design which is subject to change
 - B Lavelle asked if this was waiting on the geotechnical data results? Yes for the alternative evaluation and selection process
 - K Muenchow DOE stated that a vegetative cover is also being looked at as an alternative
 - J Schieffelin CDPHE asked if the areal size was still being determined? Yes a worst case grading plan has been drafted (see attachments)
 - J Schieffelin CDPHE asked if the portion of the South Interceptor Ditch (SID) within the landfill would be sacrificed? Yes but only that part which runs through the landfill. The EG&G Surface Water Division has been updated to ensure that sitewide surface water drainage is considered.
 - J Schieffelin CDPHE asked whether enough material could be consolidated so the SID could stay intact? It is unlikely since in addition to the cover some type of groundwater barrier would be installed at the toe of the landfill
 - K Muenchow stated that plant drainage above the landfill would have to be controlled so as not to impact the cap

Attachment 2 94 RF 11801 Page 3 of 4

M Yaskanın Rust stated that controls during construction will also be specified to control erosion

The other OU5 IHSSs were discussed Upcoming deliverables include Technical Memoranda (TM) # 1 and # 2 TM #1 and TM # 2 cannot be finalized until the results of the Baseline Risk Assessment (BRA) are available Until the BRA results are available 10 6 Programmatic Prelimianary Remediation Goals (PPRGs) will be assumed A snapshot of significant contaminants was presented (see attachments)

The anticipated outcomes of the DSA were presented (see attachments)

There are several expected outcomes of the DSA for remediating the surface and subsurface soils at IHSSs 133 1 through 133 4. They are Excavate/stabilize or solidify/dispose. In situ stabilization/solidification. Cap/cover and Containment cell. The RI report will provide data regarding whether groundwater comes in contact with the ash and whether this provides a conduit for movement of the contamination from the ash into the groundwater.

The presence of groundwater at OU 5 is very sporadic so source control and monitoring will be a likely option. The groundwater at the C Ponds will also be remediated through source control and monitoring/management per the Pond Water IM/IRA.

The surface soil at IHSS 209 is expected to be No Further Action (NFA) Aroclor was detected however the maximum concentration detected is below TSCA levels. The surface soil at IHSS 133 5 and 133 6 are also expected to go NFA. There is approximately 6 drums of debris/rubble located near these IHSSs that may warrant an accelerated cleanup action.

- Accelerated actions apply to situations where surface cleanup will suffice. The area between IHSS 133 5 and 133 6 has surficial debris/rubble that is contaminated and is a candidate for an accelerated action. EG&G will develop a proposal that will be submitted to the agencies detailing how the material will be decontaminated stored and/or disposed. A Proposed Action Memorandum could be used as the mechanism to propose the action. Both EPA and CDPHE were in favor of this accelerated action.
- 9 EG&G has looked at the ash material located within IHSS 133 1 through 133 4 Contaminant concentrations are much lower than concentrations of the same contaminants in the landfill. While the subsurface soil contaminants are not above the Construction Worker 10⁻⁶ PPRGs, they may be a possible source of groundwater contamination. EG&G presented the idea of putting the solidified/stabilized ash material into the landfill prior to it being capped. (The results from the EG&G encapsulation treatability study would be available in June 1995 and the cemetation treatability study results would be available in September 1995.)
 - J Schieffelin CDPHE expressed concern about putting additional material into the landfill since it was already situated on an unstable slope and the landfill may not be the most optimum location. He suggested that a long term programmatic approach for the entire RFETS be examined for these purposes rather than just looking at each individual OU
 - M Yaskanın RUST addressed J Schieffelin's concern regarding the stability of the slope. The project will evaluate the mechanisms and pathways leading to slope instabilities. Different grading plans will be examined to determine which loading scenarios will result in a stable cover

- B Lavelle EPA asked when will the Risk Assessment information be available to tie into the DSA? Approximately 2 months prior to issue of the draft report for internal review (May 1995) Therefore we may know the results of the BRA as early as in March or April of 1995 The DSA cannot be finalized without the BRA information
- M Hogg ICF Kaiser for EG&G asked J Schieffelin if his main concern with moving the ash pit material into the landfill was the radioactive contamination?
- J Schieffelin CDPHE replied that no matter what the contaminants are we should be looking at the site as a whole
 - B Lavelle EPA agreed that no one is really looking at the big picture
- 10 The next meeting on the OU5 CMS/FS will be on January 26 1995 at 8 30 a m The location will be announced at a later date

Meeting Agenda - OU5 CMS/FS November 17, 1994

I Introduction

RI/FS Program Update Strategies for Future FS Tasks Review of OU5 IHSSs

II Original Landfill

Presumptive Remedy Components Geotechnical Boring Program Presumptive Remedy Report Borrow Source Suitability Evaluation

III All Other OU5 IHSSs

Snapshot of Significant' Contaminants
Anticipated Outcomes of DSA
Advantages/Disadvantages of Remedial Alternatives

IV Summary

ATTENDANCE LIST

for OU5 CMS /FS Review Meeting

November 17 1994

Name	Organization	Title	Phone/Fax
1 Bob Cygnarowicz 2 Kent Krum eda 3 Mark Yaskan n	EK+A Rust Rust	Fe s 6 14 studies Engineer Eng neer	966-8601 / 966-4000 x 74 469-6660 / 469-6665 694-6660 / 694-4410
4 Indyw b Ellson 5 Do, Denn son 6 Scott Howowell	Medit DESly ASI EGEG	or Hyla pulyist Proms OUS FS/-S	(214)754-8725 980 0032/980 1206 98-00-6/980 1206
7 Doren Houkins 8 B-an Schu 9 Carol Bicher	ller PRC		
10 FRAZER LOCKHART 11 KWET Muench 12 Roberta Sato 13 Mary Lee Lag 14 Rotha Randal 15 Jac Schieffeli 16 Bonnie Caner 17 - Malon, Ara	MAE MAE TCELL EGAG N COPHE EFA	Oredor, EAND DOE/ER Project Manager RISH Assessor Risk assessor RISK Assessor	966-7846/4871 966-2184/4871 415 591 9300/3917 966-8924 692-3356 294-1067/7859 692-3415

OVERVIEW OF IHSSs

IHSS NUMBER	DESCRIPTION	CLOSURE STRATEGY
115/196	ORIGINAL LANDFIĻL	PRESUMPIVE REMEDY
133 1 - 133 4	ASH PITS	CMS/FS
133 5	INCINERATOR AREA	CMS/FS
133 6	CONCRETE WASH PAD	CMS/FS
142 10 -142 11	C PONDS	CMS/FS
209	SURFACE DISTURBANCES	CMS/FS

ORIGINAL LANDFILL

Containment and Control/Management Presumptive Remedy

Landfill Cap/Cover

Ground Water Diversion/Collection

Leachate Collection (NA)

Surface Water Diversion

Landfill Gas Venting (NA)

Institutional/Access Controls

Geotechnical & Design Criteria

EDS Identified Geotechnical Data Needs

Geotechnical Boring Program

LANDFILL ACTIVITES

Geotechnical Boring Program

Completion of 19 Borings

Collection of Geotechnical Samples

Performance of Approximately 200 Geotechnical

Analyses

Field Activities Start on November 28, 1994

Slope Stability Analysis

Conceptual Grade Design

ORIGINAL LANDFILL

(Continued)

Presumptive Remedy Evaluation & Selection **EPA/CDPHE** Review Meeting

DSA Level Analysis

January, 1995

Draft Presumptive Remedy Report

DAA Level Analysis / Selection of Alternative

March, 1995

Final Presumptive Remedy Report

DAA Level Analysis / Selection of Alternative

Aprıl, 1995

Borrow Source Suitability Evaluation
Report Content and Recommendations
Future Work

OU5 IHSSs PCOCs by Media

SSHI	Media	PCOCs ^a
	Surface Soils	Aroclor Uranıum
133 1 133 4 Ash Pits	Subsurface Soils	Uranıum
	Groundwater	Radıum Uranıum
133 5 Incinerator Area	Surface Soils	Aroclor (18 ppm)
133 o Concrete Wash Pad Area	Debris/Rubble	Radioactivity (6 637 cpm)
142 10 Pond C1	Surface Water	Pentachlorophenol Americium Uranium
142 11 Pond C2	Groundwater	Radium Uranium
209 & Other Soll Disturbance Areas	Surface Soils	Aroclor (52 ppm)

aPCOCs are contaminants of concern found to be present at concentrations greater than 10-6 PPRGs

Note The maximum detection of Manganese in the Ash Pits and C Series Ponds groundwater exceeded the 10-6 PCOC value The source of Manganese is expected to be geochemical in nature however

OU5 IHSSs Anticipated Outcomes of the DSA

IHSS	Media	PCOCs4	Remedial Alternatives
	Surface Soils	Aroclor Uranıum	אנוקאנלאלאלאוו אנ אי ארואינאלאלאוואן אי
133 1 133 4 Ash Pits	Subsurface Soils	Uranıum	ל נות ווווווורות ליו] נית ווווווורות ליו]
	Groundwater	Radium / Uranium	Տոյոււ (տրեսի & Կնոյւտյո
133 5 Incinerator Area	Surface Soils	Aroclor (18 ppm)	N V (Yux lor 15t A Junu)
133 6 Concrete Wash Pad Aren	Debns/Rubble	Radioactivity (6 637 cpm)	Accelerated Action
142 10 Pond C1	Surface Water	Pentachlorophenol Americium Uranium	Source Control & Monitoring Pond Witer IM/IRA
142 11 Pond C2	Groundwater	Radıum Uranıum	Source Control & Monitoring
209 & Other Soul Disturbance Areas	Surface Soils	Aroclor (52 ppm)	NFA (Arrelor < 15CA lunu)

aPCOCs are contaminants of congern found to be present at concentrations greater than 10-6 PPRGs

Note The maximum detection of Manganese in the Ash Pits and C Series Ponds groundwater exceeded the 10-6 PCOC value. The source of Manganese is expected to be geochemical in nature, however

Table 3.1
Rocky Flats Operable Unit 5
Comparison of Contaminant of Concern Concentrations to PPRGs
IHSS 133.1 133.4 Ash Pits

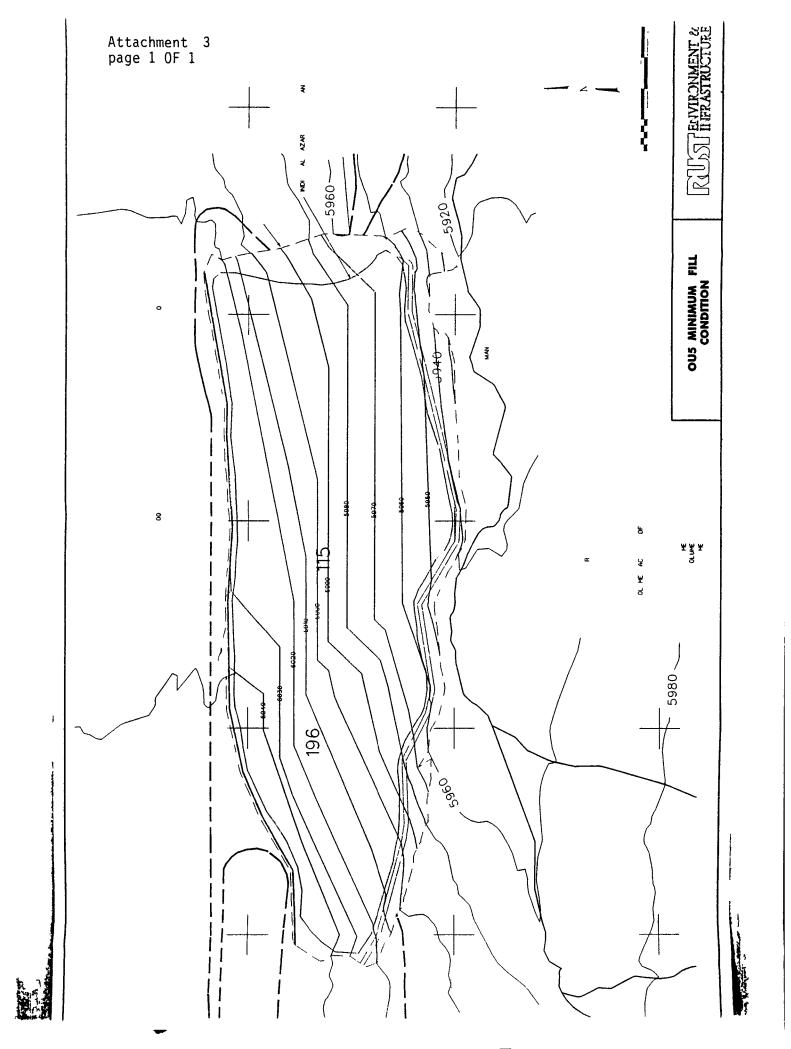
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	Contaminant of Concern		Acenanhthene	Acetone	Aroclor 1254	Benzo(a)anthracene	Benzo(a)pyrene	Cadmiim	Chromium	Copper	Dibenzo(a h)anthracene	1.1 Dichloroethene	Fluoranthene	Fluorene	Indeno(1.2.3-cd)pyrene	Manganese	Mercury	Naphthalene	Pentachlorophenol	Pyrene	Silver	Strontium	Tetrachloroethene	Trichloroethene	Zinc	Americium-241, total	Plutonium-239/240 total	Radium 226	U 233/234, total	U 235, total	U 238	

Comparison of Contaminant of Concern Concentrations to PPRGs IIISS 133 1 133 4 Ash Pits Table 3 1 Rocky Flats Operable Unit 5

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 Datum was not presented in PPRG document
 COC Not applicable for this medium
 Programmatic Risk Based Preliminary Remediation Goal
 Upper Hydrostratigraphic Unit

N/A PPRG UHSU



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	was but the starpness of the sleepe.	- Apul1995
1	will be studied under the FS	Kest in San/Rb may want to secust
,	wa they are difficult conditions	weaking out duglandful for clous
_ :	in of many causes but the full	
1	unit be used to stabulage	· Borrow Source Sentalulity Elak
1 =	There are Destroy a the	-3 marte areas Junives Hered.
-	gestech program until gande.	Claystone were destifued -
		added data would be sugal.
1	- Paro lumedy Re port well summaring all this	- a report outlineng this well be jout
-20	•	

7		Attachment 4 41 page 4 of 5
	09468	8/2-50
		John Can do a of page PAM
	1455 133 5\$ 60 - would cluke to do an	1455122141327,344
	accelerated as From to more detrus nutrile	Charm Rad not in oak put a Rad week
	(21/2 dopendrumy) to the clander?	of the landeres
	Borne good idea good example of an early action	Rivor (Kort) - construenter 106
	1455 133.1,2,384-in with aldernations	olcoking at
	have Weenmy growth	16.03 - too 10 cm surface sock
	-posselly a cup after scrapenatop	
	10 12 metres	Thust chunce for a PAM for oak puts
	- source control for on	
	- well have to study under FS	. Lise yours going to have a problem
		putting ask in landfell
	- Joe what we what should	light - We are going to do an regular
	agy contaminated netal debus glass	encamint on Tred Study
		\$ texted
	Ed-on	
	Joe - can we just decon it	would more it en apulated
	Cagu - maybe	We downt seem right to out more
-	kust our proposal would melude	usiste, even treated into an
5	Frange somoded noted need some kind of son the 9	unstable landfull
	Kent- wull propose an accel action	Rust The elemethes well be stalle
		backup by a high soft factor
	Kust - what type of mechanism / protedure	when are we orching the right place
	Florge - we prested much against to PHM you IHES	to place to dispose - They back &
	Croyd- not really in an 14155	elock @ strunds proliteres for
	slot - 1455 (remaganes ess gray	(1009 tesa progranates

	如果,我们就是一个人,我们就是我们的一个人,我们就是一个人,我们就是一个人,我们就是一个人,我们也会会看到一个人,我们也会会会会会会会会会会会会会会会会会会会会	
5 2		Attachment 4 }(
	8/17/00	8/2bd /
	Brome coorden the Womande Nethernal	you so aired while tookers
	Tesdusce ppl. Do not wend and de	determinance sand
	by cost or other protitions	but - your diopens at most case on
	- Refort also looks @ cyfort areas	Margest arried 1 externt
		Kunt - aurestly of sexpected in the
	Mary Les 15 allEDA/CDH need to see 10)	slope is threatening the inchallet
	FS process to an APAR'S	& proceeding need to so cornections
	cnalysis	Joe SO the SID well be sacrepared
	France - yes, where, MCL a exceeded	Ed - gos the part that sums through
	greenduates	the candfull, the upper part.
	Document in For Pres len lever	un are norting w/ 510 to enaun
		plu of diamage is considered
	You - are we capping the whole landful?	Joe - could you cleave the SID in place
	Too - 460, but we are looking at moung	
	publille up north over of SID and	
	placeng toe of landfull along	Ciffy - I wouldn't go that jas
	SID or Road to reduce umount of	
	4ll 4 to stay away nom we as much	Kust - alrea landfull Chamage may
	- well also look at bunging in	need to be controlled so as
	East west edges in report	not to import the cap
_	JUL - well you look Dyospourt in Pres Rem	Rast - controls desiraconato to contral eross
	w,	TI all other 1455s
	Papert but in the Slope State Report	Snapshot of Sugrepheand Contaminands
	toware - warding on grated took	dook of see cepes of solder
?	College AG alternative solich on	antiegasked Bux 10mes of DSA (TMZ)
	Kust also booking@ wegetitum cover	ser copies of solides
¢.		

42	Attachment 4 page 5 of 5	
	pq. 8/8	
-	1 3	1
ž	Vu - Gw Thought process	I
* -		
	- cont in GW now looking at it - why are you s	
	Rust - evaluating mechanisms & pathways	1
ę.	Vice -	
~		
}	Bonnie-when does Risk Asont info be	-
	available to the into DSA	_
i	Ciggy - & 2 mos vefore draft (May)	_
11 - 14	sc around april	
ię —	Rust - cannot finaline DSA V/O Rt info	
		些
	Marylee - 15 your main conarn u/moving	验
\	ashpets RADs	
	Joe - no - doesn't matter what cont are	
<u> </u>	Bonne-lagree no one is clooking at	
	Siteurde picture	
	Kurt -	
		980 mg
1 1	EPA-Ronnie lavelle Conne Jable	
ļ	CDH- Jue Scheiftlin () on noty namels	
	DOE - Kurt Muenchow Hot from	
J(:		
H		

The second secon